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**ABSTRACT OF THE DISCLOSURE**

A burner for a vapour deposition process has a central nozzle for ejecting a glass precursor material, at least a crown of nozzles surrounding said central nozzle for ejecting a flame reactant, and a circular nozzle between said central nozzle and said crown of nozzles for ejecting an innershield gas, wherein the central nozzle has a concave shape in a cross section in the axial plane and, preferably, a symmetry about an axial plane.